UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,001	01/16/2002	Markus Doetsch	L&L-I0206	6339

7590   09/02/2003

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EXAMINER
BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2003* .

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____ .

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   This is in response to amendment filed 6/11/03 in which claims 1-12 are pending. The

applicant's amendments have been fully considered but they are moot based on the new ground of

rejection therefore this case is made final.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasner U.S.

Patent No 6,289,041 in view of Atarius U.S. Patent No 6,278,699 B1.

As per claim 1, Krasner discloses a method of synchronizing mobile radio receivers in a

cellular CDMA mobile radio system, wherein a first synchronization channel with a first frequency

is provided for transmitting a synchronization signal with a code that is know to the mobile radio

receivers and to base stations of the mobile radio system and wherein a transmission from a base

station to a mobile radio receiver delays the synchronization signal by an unknown time period

and the first frequency is shifted by the transmission to a second frequency, the method comprises

the following steps: splitting a received synchronization signal into a real part and an imaginary

part signal (see figs.2, 4, 6 elements 202, 402, 602 and col.3, lines 57-58 and col.5, lines 40, 52);

sampling the real part signal and the imaginary part signal to form sampled signals (see figs. 4, 6

elements 406, 606 and col.3, lines 61-62 and col.5, lines 42-44, 50-67 and col.6, lines 1-15);

matched filter (see figs. 2, 4, 6a elements 204 , 408 and 410, and col.3, line 56 and col.5, lines 5-

6, 47 and col.6, lines 60-62). Note that matched filter is well Known in the art to perform

correlation process, therefore the matched filter of Krasner is functionally equivalent to the

claimed (digitally filtered   each sampled signal to correlate the sampled signal to the know code

and to form filtered signals); squaring each filtered signal to form squared signals (see figs.2, 4

elements 206, 416 and col.4, line 14 and col.5, line 7 and col.6, lines 45, 66-67); determining a

maximum signal level from the squared signals (see figs. 2, 4 elements 208, and 2nd summer and

col.4, line 22 and col.5, lines 7-8); loop integrator (see figs.2, 4 elements 210, 426 and col.4,

lines 16-28 and col.5, lines 7-19) is functionally equivalent to the claimed (estimating the

unknown time period with the maximum signal level determined in the determining steps); digital

frequency translate (see fig.4 element 404 and col.5, lines 40-50 and col.7, lines 55-56) is

functionally equivalent to the claimed (fine-tuning the second frequency to the first frequency).

However Krasner does not teach despreading the synchronization received with the

known code and taking into account the time period estimated in the estimating steps and

determining a frequency deviation between the first frequency and the second frequency based on

the despread received synchronization signal.

Atarius teaches despreading the received synchronization signal with the known code and

taking into account the time period estimated in the estimating steps (see col.5, lines 28-40) and

determining a frequency deviation between the first frequency and the second frequency based on

the despread received synchronization signal (see abstract and col.3, lines 8-22 and col.6, lines 7-

59).

It would have been obvious to one of ordinary skill in the art to implement the

despreading of Atariusinto Krasner as for the mobile station to compensate for frequeny error

associated with local oscillator to perform frequency synchronization as well astime

synchronization as taught by Atarius (see col.6, lines 55-59).

As per claim 2, the method of Krasner does include delaying the sampled values of each

signal (see figs 6a, 6b elements 608, 622 and col.10, lines 7, 36-37 and col.13, line 23).

As per claim 3, the method of Krasner does include multiplying the different delayed

sampled (see figs. 6a, 6b elements 612, 624 and col.8, line 40).

As per claim 4, the method of Krasner does include pairs of identical coefficients (see fig.

12 element 1206 and col.16, line 19).

As per claim 5, the method of Krasner does include code sequence chips (see col.3, lines

30-35).

As per claim 6, the method of Krasner does include sampling each signal (see fig.4

element 406).

As per claim 7, Krasner discloses a device for synchronizing mobile radio receivers in a

mobile radio system having a first synchronization channel for transmitting a signal with a code

that is know to all the mobile radio receivers and to all base stations of the mobile radio system

comprising: input signal processing units in a mobile radio receiver for processing a received

signal including a real part and an imaginary part signal (see figs.2, 4, 6 elements 202, 402, 602

and col.3, lines 57-58 and col.5, lines 40, 52; said input signal processing units generating sampled

values (see figs. 4, 6 elements 406, 606 and col.3, lines 61-62 and col.5, lines 42-44, 50-67 and

col.6, lines 1-15); a plurality of delay circuits (see figs. 6a and 6b element 608, 622 and col.10,

lines 7, 36-37 and col.13, line 23) connected in series with said input signal processing units for

receiving an input signal and outputting an output signal, said delay circuits receiving the sampled

values and matched filter (see figs. 2, 4, 6a elements 204 , 408 and 410, and col.3, line 56 and

col.5, lines 5-6, 47 and col.6, lines 60-62). Note that matched filter is well Known in the art to

perform correlation process, therefore the matched filter of Krasner is functionally equivalent to

the claimed (correlating) the real part and the imaginary part signal with the known code;

multipliers (see figs. 6a, 6b elements 612, 624 and col.8, lines 34, 40) connected to receive the

input signal and the output signal of each delay circuit and multiplying a supplied signal with a

coefficient; first adder (see fig.6a element 610 and col.8, line 34) connected to receive an output

signal from each said multiplier and each outputting a summed signal; squaring each elements

having an input connected to receive the summed signal from a respective said first adder and

outputting a squared signal (see figs. 2, 4 elements 206, 416 and col.5, line 7 and col.6, line 45); a

second adder (see figs. 2, 4 element 208 and col.4, line 22) connected to the squared signals from

said squaring elements.

As per claim 8, the device of Krasner would include a low pass filter, a sampler and a

memory as to accurately synchronize first frequency with the second frequency.

As per claim 9, the device of Krasner does include different number of coefficient (see

fig.6a elements W1-W1023).

As per claims 10 and 11, the device of Krasner does include multipliers (see figs. 6a, 6b

elements 612, 624 and col.8, line 40).

As per claims 12, Atarius does teach a primary synchronization (see col.3, lines 4-6).

Furthermore implementing such teaching into Krasner would have been obvious to one skilled in

the art as to avoid the need for a matched filter as taught by Atarius (see col.3, line 6)

Conclusion

4.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final

action.

The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Haugli et al U.S. Patent No 5,991,279 teaches a wireless packet data distributed communications
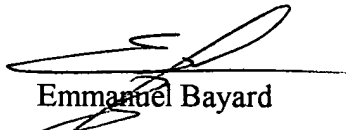
system..

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Emmanuel Bayard whose telephone number is (703) 308-9573. The

examiner can normally be reached on Monday-Thursday from 8:00 AM - 5:30 PM. The examiner

can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mohammad H. Ghayour , can be reached on (703) 306-3034. The fax phone number

for this Group is (703) 872-9314.

Art Unit: 2631

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Emmanuel Bayard

Patent Examiner

March 3, 2003